

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: **Michael Chad Hollis et al.**

Serial No.: **10/717,536** Art Unit: **3724**

Filed: **November 21, 2003** Examiner: **Stephen CHOI**

For: **BEVEL ANGLE LOCKING ACTUATOR AND BEVEL ANGLE LOCKING  
SYSTEM FOR A SAW**

**AMENDED APPEAL BRIEF**

Commissioner for Patents  
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401 Dulany Street  
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Sir:

This is an Appeal Brief under 37 C.F.R. § 41.37 in connection with the Final Office Action mailed on March 9, 2007, the Notice of Appeal filed on June 11, 2007 and the Notification of Non-Compliant Appeal Brief mailed on September 10, 2007. Each of the topics required by Rule 41.37 is presented herewith and is labeled appropriately.

**(1) Real Party In Interest**

The real party in interest is Black & Decker Inc.

**(2) Related Appeals And Interferences**

There are no other appeals or interferences related to this case.

**(3) Status Of Claims**

Claims 1-5, 29-31, and 52-54 are pending and rejected. Claims 6-28 and 32-51 have been canceled. Claims 1-5, 29-31, and 52-54 are appealed.

**(4) Status of Amendments**

There are no outstanding amendments.

**(5) Summary Of Claimed Subject Matter**

The following paragraphs provide a summary of the claimed subject matter recited in independent claims 1, 52, and 54. The present invention is directed to a bevel angle locking actuator and bevel angle locking system for a saw. The saw comprises a base assembly 100, a saw support assembly 200 and a saw unit 300. *Figure 1*. The base assembly can include a base and a turntable. [0017]. The base assembly can also include a fence assembly. [0019]. A top surface of the base assembly and the front surface of the fence assembly can support a workpiece during cutting. [0019]. The saw support assembly can be rotationally mounted to the base assembly and can rotate about a horizontal first rotational axis. [0020]. The saw support assembly can be rotationally mounted so that the first rotational axis is approximately parallel to the top surface of the base assembly. [0020]. The saw unit can be pivotally mounted to the saw support assembly. [0023]. The saw unit can mount a saw motor which can drive a saw blade. [0023]. The saw support assembly pivots the saw unit about a pin to plunge the saw blade into a workpiece resting on the top surface of the base assembly. [0024]. The saw support assembly can rotate relative to the base assembly to adjust the bevel angle of cut. [0020].

A bevel angle locking actuator can be mounted to the saw support assembly so that the bevel angle locking actuator can rotate in unison with the saw support assembly about the first rotational axis when the bevel angle is adjusted. [0028]. The bevel angle locking actuator can be in a locked position (as shown in Figure 4) or in an unlocked position (as shown in Figure 2). [0030]. In order to lock the position of the saw support assembly relative to the base assembly (and lock the bevel angle), a bevel locking linkage slides to wedge the bevel locking linkage between two cam surfaces. [0032]. In this position, the bevel locking linkage pushes a trunnion insert into firm engagement with a knuckle which causes the bevel locking linkage to push against a bevel locking flange. [0032]. The bevel locking flange in turn pushes against a nut which in turn pulls on and tensions a bolt, thereby locking the saw support assembly relative to the base assembly. [0032]. The bevel locking linkage moves in a straight line motion in a direction approximately normal to the longitudinal axis of the bolt. [0033].

**(6) Grounds of Rejection to be Reviewed on Appeal**

Whether the rejection of claims 1-5, 29-31, and 52-54 under 35 U.S.C § 102(b) as being anticipated by U.S. Patent 6,021,700 to Garuglieri ("Garuglieri") is proper.

Whether the rejection of claim 30 under 35 U.S.C § 103(a) as being unpatentable over Garuglieri in view of Applicant's Admitted Prior Art ("AAPA") is proper.

**(7) Arguments**

**The Rejection of Claims 1-5, 29-31, and 52-54 under 35 U.S.C § 102(b)**  
**as being Anticipated by Garuglieri is Not Proper**

The rejection of claims 1-5, 29-31, and 52-54 under 35 U.S.C § 102(b) as being anticipated by U.S. Patent 6,021,700 to Garuglieri ("Garuglieri") is not proper. In order to maintain an anticipatory rejection under 35 U.S.C. §102, a reference must teach each and every element of the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference). Garuglieri does not disclose each and every element in claim 1 of the present application.

Specifically, Garuglieri does not disclose "A saw comprising: a base assembly with a top surface; a fence assembly mounted to the base assembly with a front surface positioned above the top surface of the base assembly, the front surface of the fence assembly and the top surface of the base assembly cooperating to support a workpiece thereon; a saw support assembly rotatably mounted to the base assembly to rotate relative to the base assembly about a first rotational axis; a saw unit having a saw blade capable of turning to cut a workpiece, the saw blade defining a cutting plane that is approximately parallel to the first rotational axis, the saw unit supported by the saw support assembly above the top surface so that the saw blade is capable of being moved relative to the base assembly by a user into a workpiece resting on the top surface of the base assembly to make a cut, the saw unit and the saw support assembly rotating together about the first rotational axis to adjust the bevel angle of the saw blade; and a bevel angle locking actuator mounted to the saw support assembly, wherein the bevel angle

locking actuator rotates in unison with the saw support assembly about the first rotational axis when the bevel angle of the saw blade is adjusted, and wherein the bevel angle is capable of being adjusted by a user when the bevel angle locking actuator is in an unlocked position and the bevel angle cannot be adjusted by a user when the bevel angle locking actuator is in a locked position.” as recited in claim 1 of the present application. (Emphasis added).

As shown in Figure 1 of the present application, the bevel angle locking actuator 290 is mounted to the saw support assembly 200. As shown in Figure 2 of the present application, the bevel angle locking actuator 290 comprises a handle 292 and a lever 291 with the lever 291 being mounted to the lower arm 210. “Mounted” is defined as “To fix securely to a support: *mount an engine to a car.*” *The American Heritage Dictionary of the English Language, Fourth Edition* (2005). Thus, the bevel angle locking actuator is fixed securely to the saw support assembly.

In contrast, as shown in Figure 2a of Garuglieri, the handle 172 is attached to a tightening arrangement 67 and link pin 66. As recited in Garuglieri, “The tightening arrangement may, for example, be such as is described in U.S. Pat. No. 5,590,991.” In U.S. Pat. No. 5,590,991, the handle 172 is captured between two cam followers and two washers. *See U.S. Pat. No. 5,590,991, Col. 2, ll. 25-33.* As shown in Figure 2a of Garuglieri, the tightening arrangement 67 is located rearward of the pivot support 26. In Garuglieri, the handle 172 is attached to the tightening arrangement 67 which is attached to the pivot support 26. The Examiner asserts that the pivot support 26 is the saw support assembly. *See Final Office Action, p. 2.* Thus, in Garuglieri, the bevel angle locking actuator 172 is attached to the tightening arrangement 67 and link pin 66 which are attached to the pivot support 26/saw support assembly. However, the tightening arrangement 67 and link pin 66 are not part of the pivot support 26, they are separate pieces. Specifically, the “link pin joins the guide support 62 to the pivot support 26 and passes through a slot 68 in the pivot block rearmost portion 50.” *See U.S. Pat. No. 5,590,991, Col. 4, ll. 31-40.* Therefore, in Garuglieri, the bevel angle locking actuator 172 is not fixed securely to the saw support assembly. Hence, Garuglieri does not disclose “a bevel angle locking actuator mounted to the saw support assembly” as recited in claim 1 of the present application. For at least these reasons, independent claim 1, as well as dependent claims 2-5 and 29-31 are patentable over Garuglieri.

Regarding independent claim 52, since this claim contains similar limitations as argued above with respect to independent claim 1, the same arguments apply to independent claim 52. Specifically, Garuglieri does not disclose “a base assembly; a saw unit having a saw blade turning about a second rotational axis to cut a workpiece; a saw support assembly rotatably mounted to the base assembly, the saw support assembly rotating relative to the base assembly about a first rotational axis to adjust the bevel angle of the saw blade, and the saw support assembly supporting the saw unit and pivoting the saw unit to plunge the saw blade into a workpiece resting on the base assembly; a bevel locking lever pivotally mounted to the saw support assembly, the bevel locking lever pivoting relative to the saw support assembly about a third rotational axis not parallel with the first rotational axis.” as recited in claim 52 of the present application. (Emphasis added). For at least these reasons, independent claim 52, as well as dependent claim 53, are patentable over Garuglieri.

Regarding independent claim 54, Garuglieri does not disclose “A saw comprising: a base assembly; a saw unit having a saw blade; a saw support assembly rotatably mounted to the base assembly, the saw support assembly supporting the saw unit and pivoting the saw unit to plunge the saw blade into a workpiece resting on the base assembly, the saw support assembly rotating relative to the base assembly about a first rotational axis to adjust the bevel angle of the saw blade; a bevel locking linkage which translates in a direction normal to the first rotational axis, the translation of the bevel locking linkage causing the saw support assembly to be pushed against the base assembly creating friction which prevents relative rotation.” (Emphasis added).

“Translate” is defined as “to change the position of (a body or figure) in space *without rotation.*” Webster's Third New Int'l Dictionary 2429 (1993). This meaning is consistent with the specification, which describes the bevel locking linkage as moving “almost in straight line motion in a direction approximately normal to the longitudinal axis of bolt 260.” [0033]. The specification and Figures further define the bevel locking linkage as moving straight, without rotating. [0035-37]; *See Figures 2-5.* Garuglieri fails to disclose such a translating linkage. In contrast, Garuglieri discloses a bevel locking linkage that *rotates* about an axis normal to the bevel angle axis. *U.S. Pat. No. 6,021,700, Col. 4, ll. 13-25, Figures 2a and 2b; U.S. Pat. No. 5,590,991, Col. 2, ll. 42-50, Figure 1.* Thus, Garuglieri fails to disclose a “saw support assembly rotating relative to the base assembly about a first rotational axis ... a bevel locking linkage which *translates* in a direction normal to the first rotational axis,” as recited by claim 54 of the

present application. For at least these reasons, independent claim 54 is patentable over Garuglieri.

Therefore, the undersigned representative respectfully requests that the rejection of claims 1-5, 29-31, and 52-54 under 35 U.S.C § 102(b) be withdrawn.

**The Rejection of Claim 30 under 35 U.S.C § 103(a)**  
**as being Unpatentable over Garuglieri in view of AAPA is Not Proper**

The rejection of claim 30 under 35 U.S.C § 103(a) as being unpatentable over Garuglieri in view of Applicant's Admitted Prior Art ("AAPA") is not proper. Since claim 30 is dependent on allowable independent claim 1 and since the AAPA does not cure the deficiencies of Garuglieri with respect to claim 1 as recited above, dependent claim 30 is allowable as well. Therefore, the undersigned representative respectfully requests that the rejection of claim 30 under 35 U.S.C. §103 be withdrawn.

Conclusion

For at least the reasons given above, the rejections of claims 1-5, 29-31, and 52-54 are improper. Appellants respectfully requests the final rejection by the Examiner be reversed and claims 1-5, 29-31, and 52-54 be allowed.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-0206, and please credit any excess fees to such deposit account.

Respectfully submitted,

Dated: October 10, 2007

  
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**(8) Claims Appendix**

1. A saw comprising:
  - a base assembly with a top surface;
  - a fence assembly mounted to the base assembly with a front surface positioned above the top surface of the base assembly, the front surface of the fence assembly and the top surface of the base assembly cooperating to support a workpiece thereon;
  - a saw support assembly rotatably mounted to the base assembly to rotate relative to the base assembly about a first rotational axis;
  - a saw unit having a saw blade capable of turning to cut a workpiece, the saw blade defining a cutting plane that is approximately parallel to the first rotational axis, the saw unit supported by the saw support assembly above the top surface so that the saw blade is capable of being moved relative to the base assembly by a user into a workpiece resting on the top surface of the base assembly to make a cut, the saw unit and the saw support assembly rotating together about the first rotational axis to adjust the bevel angle of the saw blade; and
  - a bevel angle locking actuator mounted to the saw support assembly, wherein the bevel angle locking actuator rotates in unison with the saw support assembly about the first rotational axis when the bevel angle of the saw blade is adjusted, and wherein the bevel angle is capable of being adjusted by a user when the bevel angle locking actuator is in an unlocked position and the bevel angle cannot be adjusted by a user when the bevel angle locking actuator is in a locked position.
2. The saw of claim 1 wherein:
  - pivoting the bevel angle locking actuator to its locked position causes a surface of the saw support assembly to be moved against a surface of the base assembly to increase the pressure between the surfaces, the increased pressure resulting in increased friction which resists rotation of the saw support assembly relative to the base assembly.

3. The saw of claim 1 wherein:

the bevel angle locking actuator is pivotally mounted to the saw support assembly to pivot about an axis approximately normal to the first rotational axis, the bevel angle locking actuator pivoting relative to the saw support assembly between its locked position and unlocked position.

4. The saw of claim 1 wherein:

the bevel angle locking actuator is pivotally mounted to the saw support assembly and pivots about a pivoting axis relative to the saw support assembly between its locked position and unlocked position.

5. The saw of claim 4 further comprising:

an eccentric surface eccentrically formed from the pivoting axis of the bevel angle locking actuator, the eccentric surface being operatively connected to the bevel angle locking actuator; and

a linkage;

wherein pivoting of the bevel angle locking actuator to the locked position causes the eccentric surface to pivot, the pivoting of the eccentric surface driving a movement of the linkage, the movement of the linkage pushing a surface of the saw support assembly against a surface of the base assembly to lock the bevel angle.

6-28. (Canceled).

29. The saw of claim 1 wherein the bevel angle locking actuator comprises an elongated lever.

30. The saw of claim 29 wherein the elongated lever is formed from stamped sheet metal.

31. The saw of claim 29 wherein the saw support assembly comprises a lower arm, and when the bevel angle locking actuator is in the locked position, the elongated lever extends generally parallel to the lower arm.

32-51. (Canceled).

52. A saw comprising:

a base assembly;

a saw unit having a saw blade turning about a second rotational axis to cut a workpiece; a saw support assembly rotatably mounted to the base assembly, the saw support assembly rotating relative to the base assembly about a first rotational axis to adjust the bevel angle of the saw blade, and the saw support assembly supporting the saw unit and pivoting the saw unit to plunge the saw blade into a workpiece resting on the base assembly;

a bevel locking lever pivotally mounted to the saw support assembly, the bevel locking lever pivoting relative to the saw support assembly about a third rotational axis not parallel with the first rotational axis.

53. The saw of claim 52 wherein the third rotational axis is approximately perpendicular to the first rotational axis.

54. A saw comprising:

a base assembly;

a saw unit having a saw blade;

a saw support assembly rotatably mounted to the base assembly, the saw support assembly supporting the saw unit and pivoting the saw unit to plunge the saw blade into a workpiece resting on the base assembly, the saw support assembly rotating relative to the base assembly about a first rotational axis to adjust the bevel angle of the saw blade;

a bevel locking linkage which translates in a direction normal to the first rotational axis, the translation of the bevel locking linkage causing the saw support assembly to be pushed against the base assembly creating friction which prevents relative rotation.

**(9) Evidence Appendix**

None.

**(10) Related Proceedings Appendix**

None.